

REMARKS

In the Office Action mailed on March 30, 2006, claims 13-16 are objected to because of informalities. Claims 13-16 have been withdrawn, and therefore the objection to claims 13-16 is moot. Claims 8 and 11 are objected as being identical. Applicant has cancelled claim 11.

Claims 8 and 11 are rejected under 35 USC §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim subject matter which Applicant regards as the invention.

Claims 1-4 and 6 are rejected under 35 USC §102(e) as being anticipated by Payne et al. (U.S. Patent Publication 2004/0264153, "Payne"). Claims 7, 8 and 11 are rejected under 35 USC §103(a) as being unpatentable over Payne in view of Goergen (U.S. Patent 6,822,876). Claims 5, 9 and 10 are rejected under 35 USC §103(a) as being unpatentable over Payne in view of Goergen and in view of Cartier et al. (U.S. Patent 6,639,154, "Cartier").

Response to rejections under 35 USC §112

In response to the rejection of claims 8 and 11 under 35 USC §112, second paragraph, as being indefinite, Applicant respectfully requests reconsideration. In particular, it is suggested in the Office Action that the limitation that a pair of rows of vias remains open is unclear. Throughout the application, Applicant describes vias which are adapted to receive leads of a component, such as a connector. For example, in paragraph [0023], Applicant discloses vias which are large enough to receive leads of a component, as well as smaller vias. Applicant respectfully submits that it is clear from the specification that vias which remain open do not receive leads of a component. Applicant submits that the claim as pending is not indefinite, and respectfully requests reconsideration of the claim.

Response to Rejections under 35 USC §102

In response to the rejection of claims 1-4 and 6 under 35 USC §102(e) as being anticipated by Payne, Applicant has amended claim 1 to indicate that the vias of at least one row of the plurality of rows of vias are adapted to receive leads of a component

component attached to the printed circuit board. Payne is directed to a printed circuit board having a surface which provides a mating interface for signal and ground conductors. As shown in Fig. 14 and described in paragraph [0060] of Payne, signal conductor surface mounting pads 52 and ground conductor surface mounting pads 53 are provided. The circles 52a and 53a are shown to indicate where conductive vias are located underneath the surface mounting pads. The connectors shown in Figs. 12a-b and described in paragraphs [0054]-[0057] of Payne are soldered to the surface mounting pads. In contrast, Applicant's claim 1 as amended comprises a printed circuit board having an arrangement of vias including a plurality of rows of vias located between the first row of vias and the second row of vias and coupled to a ground plane, wherein the vias of at least one row of the plurality of rows of vias are adapted to receive leads of a component attached to the printed circuit board. Payne teaches away from the use of vias adapted to receive leads of a component by teaching the use of specially designed signal conductors which are soldered to a printed circuit board and coupled to a separate connector. For example, the ground conductor 250 shown in Fig. 12a comprises contact pads 254a and 255a which are soldered to the ground signal conductor surface mounting pad 53 of the printed circuit board 50. A second contact end 253 is adapted to be coupled to an opposing contact member 145 of the first electrical connector 100. Applicant has cancelled claim 2 in view of the amendment to claim 1. Applicant submits that the printed circuit board of claim 1 as amended clearly distinguishes over Payne, and respectfully requests reconsideration of the rejection of claims 1, 3, 4 and 6 in view of the amendment to claim 1.

Response to Rejections under 35 USC §103

In response to the rejection of claims 7, 8 and 11 under 35 USC §103(a) as being unpatentable over Payne in view of Goergen, Applicant respectfully requests reconsideration. Claim 7 is directed to a printed circuit board having a pair of rows of signal vias and three rows of ground vias between the rows of signal vias. Applicant respectfully submits that neither reference discloses or suggests the arrangement of vias as claimed. It is suggested in the Office Action that Payne fails to disclose a pair of rows of vias, and Goergen is cited for disclosing a pair of rows of vias. In particular, it is

it is suggested that elements 102, 104, 106 and 108 of Goergen discloses a pair of rows of vias. However, Applicant notes that neither reference discloses or suggests the three rows ground vias between the pair of row of signal vias. There is clearly no teaching or suggestion in Payne of a row of vias having ground vias between the pair of rows of vias having ground vias, or that the row of vias having ground vias receives leads of a component. Further, there is no teaching or suggestion in Goergen that there are three rows of ground vias between the pair of rows of vias having signal vias. Applicant submits that claims 7 and 8 clearly distinguish over the combination of references, and respectfully requests reconsideration of the rejection of claims 7 and 8.

In response to the rejection of claims 5, 9 and 10 under 35 USC §103(a) as being unpatentable over Payne in view of Goergen and in view of Cartier, Applicant has amended claim 5 in view of the amendment to claim 1. In particular, Applicant has amended claim 5 to indicate that one row of the plurality of rows of vias comprises vias having a smaller diameter than vias of the row of vias adapted to receive leads of a component. Cartier is cited for disclosing ground vias having different diameters. However, Cartier also fails to disclose the arrangement of rows of vias as claimed in independent claim 1. Applicant respectfully submits claim 5 is allowable over the combination of references for the same reasons that claim 1 is believed allowable.

Applicant further submits that claims 9 and 10 are allowable over the combination of references for the same reason that claim 7 as amended is believed allowable. Claim 9 is directed to a row of ground vias which having a smaller diameter than the row of signal vias. Applicant has amended claim 9 to correct a typographical error. Claim 10 is directed to a pair of row of vias having ground vias providing return paths for signals in the signal vias. However, Cartier also fails to disclose or suggest the three rows of ground vias between the rows of signal vias as claimed in claim 7. Applicant respectfully submits claims 9 and 10 are allowable over the combination of references in view of the amendments to independent claim 7.

New Dependent Claims 27-36

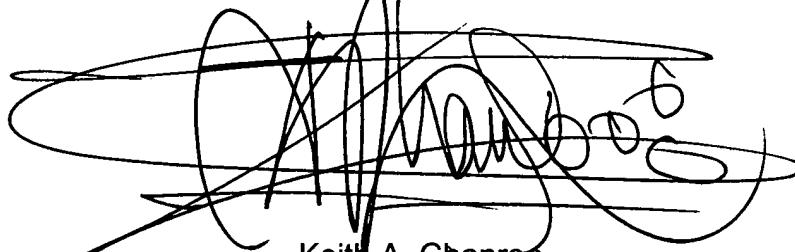
Applicant has added new dependent claims 27-36. New claims 27-30 depend directly or indirectly from independent claim 1, while new claims 31-36 depend directly or indirectly from independent claim 7. Applicant submits that now new matter is added by the new claims, and that the claims are also allowable over the prior art for the same reasons that the independent claims are believed allowable.

Conclusion

All claims should be now be in condition for allowance and a Notice of Allowance is respectfully requested.

If there are any questions, the Applicant's attorney can be reached at Tel: 408-879-6149 (Pacific Standard Time).

Respectfully submitted,



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*I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450, on June 20, 2006.*

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